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H -----MGPTLAVPTPYGCIGCKLPQPEYPPALIIFMFCAMVITIVVDLIGNSMVILAVTKNKKLRNS
M MATVPKSNMGPTKAVPTPFGCIGCKLPKPDYPPALIIFMFCAMVITIVVDLIGNSMVILAVTKNKKLRNS
R -----

H GNIFVVSLSVADMLVAIYPYPLMLHAMSIGGWDLSQLQCQMVGFITGLSVVGSIFNIVAIAINRYCYICH
M GNIFVASLSVADMLVAIYPYPLMLYAMSVGGWDLSQLQCQMVGLVTGLSVVGSIFNITAITAINRYCYICH
R -----YCYICH

H SLQYERIFSVRNTCIYLVITWIMTVLAVLPNMYIGTIEYDPRTYTCIFNYLNNPVFTVTCIHFVLPPLI
M SLQYKRIFSRLRNTCIYLVVTWVMTVLAVLPNMYIGTIEYDPRTYTCIFNYVNNPAFTVTCIHFVLPPLI
R SLQYNADLQPANTCIYLVVTWVMTVLDVLPNVYIGTIEYDPRTYTCYFNYVNNPAFTVTCIHFVLPPLI

H IVGFCYVRIWTKVLAARDPAGQNPNDNQLAEVRNFLTMEFVIFLLFAVCWCPCINVLTVLVAVSPKEMAGKIP
M IVGICYTKIWIWIKVLAARDPAGQNPNDNQFAEVRNFLTMEFVIFLLFAVCWCPCVNVLTVLVAVIPKEMAGKIP
R IVGICYTKIWIWIKVLADRDPAQNPNDNQFAEVRNFLTMEFVIFLL-----

H NWLYLAAIYFIAYFNSCLNAVIYGLLNENFRREYWTIFHAMRHPPIFFPGLISDIREMQEARTLARARAHA
M NWLYLAAICYAYFNSCLNAIIYGILNESFRREYWTIFHAMRHPILFISHLISDIRETWETRALTRARVRA
R -----

H RDQAREQDRAHACPAVEETPMNVNRNVPLPGDAAAGHPDRASGHPKPHSRSSSAYRKSASTHHKSVFHSK
M RDQVREQERARACVAVEGTPRNVNRNVLLPGDASAPHSDRASVRPKPQT-----RSTSVYRK
R -----

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Fig. 1A

H	AASGHLKPVSGHSKPASGHPKSA-TVYPKPASVHFKGDSVHFKPDVHFKPASSNPKPITGHH
M	PASIHKKSI SGHPKASVYPKPASSVHCKPASVHFKPASVHFKGDSVYFKGDTVHYRAAS---KLVTSHR
R	-----
H	VSAGSHSKSAFSAATSHPKP----IKPATSHAEP TTADYPKPATTSHPKPAAADNPELSASHCPEIPAIA
M	ISAG-----PSTSHPTSMAGYIKSGTSHPATTTVDYLEPATTSHSVLTAVDLPEVSASHCLEMTSTG
R	-----
H	HPVSDDSDLPESASSPAAGPTKPAASQLESDTIADLPDPTVVTTSTNDYHDVVVVDD---VEDDPDEMAV
M	HLRAD-----ISASVLPSPVFELAAATP-----PDTTAIPIASGDYRKVVLIDDSDDDSDCSEMAV
R	-----

**Fig. 1B**

TGT TTGCTGTG GACCTGGCTGATCCTGAGCCTGCTGGGAGATCTTAACGATCCCCAGGAGCAACATGGGGCCCCACCCCTAG  
 CGGTTCCACCCCTATGGCTGTATTGGCTGTAAGCTACCCAGCCAGAATAACCCACGGCTCTAATCATCTTTATGTTCTGCGC  
 GATGGTTATCACCATCGTTGTAGACCTAATCGGCAACTCCATGGTCATTTTGGCTGTGACGAAGAACAAGTCCGGAATTCT  
 GGCAACATCTTCGTGGTCAGTCTCTCTGTGCCGATATGCTGGTGGCCATCTACCCATACCCTTTGATGCTGCATGCCATGTCCA  
 TTGGGGGCTGGGATCTGAGCCAGTTACAGTGCCAGATGGTCGGGTTTCATCACAGGGCTGAGTGTGGTCCGCTCCATCTTCAACAT  
 CGTGGCAATCGCTATCAACCGTTACTGCTACATCTGCCACAGCCTCCAGTACGAACGGATCTTCAGTGTGCGCAATAACCTGCATC  
 TACCTGGTCATCACCTGGATCATGACCGTCTCTGGCTGTCTGCCCAACATGTACATTGGCACCATCGAGTACGATCCTCGCACCT  
 ACACCTGCATCTTCAACTATCTGAACAACCCCTGTCTTCACTGTTACCATCGTCTGCATCCACTTCGTCCCTCCTCCTCATCGT  
 GGGTTTCTGTACGTGAGGATCTGGACCACAAAGTGTGGCGCCCGTGACCCCTGCAGGGCAGAAATCCTGACAAACCAACTTGTGAG  
 GTTCGCAATTTTCTAACCATGTTGTGATCTTCTCCTCTTTTGCAGTGTGTGCTGCCCTATCAACGTGCTCACTGTCTTGGTGG  
 CTGTCAGTCCGAAGGAGATGGCAGGCAAGATCCCCAACTGGCTTTATCTTGCAGCCTACTTCATAGCCTACTTCAACAGCTGCCT  
 CAACGCTGTGATCTACGGGCTCCTCAATGAGAAATTTCCGAAGAGAAATACTGGACCATCTTCCATGCTATGCGGCACCCATATCATA  
 TTCTTCCCTGGCCTCATCAGTGATATTCTGTGAGATGCAGGAGGCCCGTACCCTGGCCCGCCCGTGCCTATGCTCGGACCAAG<sup>219</sup>  
 CTCGTGAACAAGACCGTGCCCATGCCCTGTCTGTGTGGAGGAAACCCCGATGAATGTCCGGAATGTTCATTTACCTGGTGATGC  
 TGCAGCTGGCCACCCGACCGTGCCCTCTGGCCACCCCTAAGCCCCATTCCAGATCCTCCTCTGCTATCGCAAAATCTGCCTCTACC  
 CACCACAAGTCTGTCTTTAGCCACTCCAAAGGCTGCCCTCTGTGCACCTCAAGCCTGTCTCTGGCCACTCCAAAGCCTGCCTCTGGTC  
 ACCCCAAGTCTGCCACTGTCTACCCCTAAGCCTGCCCTCTGTCCATTTCAAGGGTGACTCTGTCCATTTCAAGGGTGACTCTGTCCA  
 TTTCAAGCCTGACTCTGTTTCAATTTCAAGCCTGCTTCCAGCAACCCCAAGCCCATCACTGGCCACCATGTCTCTGCTGGCAGCCAC  
 TCCAAAGTCTGCCCTTCAAGTGTGCCACCCAGCCACCCCTAAACCCATCAAGCCAGCTACCAAGCCCATGTGAGCCCACTGCTGACT  
 ATCCCAAGCCTGCCACTACAGCCACCCCTAAGCCCGCTGTGCTGACAACCCCTGAGCTCTCTGCCCTCCCATTTGCCCCGAGATCCC  
 TGCCATTGCCACCCCTGTGTGACGACAGTGACCTCCCTGAGTCGGCCTCTAGCCCTGCGGCTGGGCCCAACCAAGCCTGCTGCC  
 AGCCAGCTGGAGTCTGACACCATCGCTGACCTTCTGACCCCTACTGTAGTCACCTACCAATGATTACCATGATGTCGTGG  
 TTGTTGATGTTGAAGATGATCCTGATGAAATGGCTGTGTGAAAAATGCTCTCTCGTAGGTGGCCAGGCAGT

**Fig. 2A**

AAGATCCTGAGCTTGCCCTGGGAGGAATGGCCACGGTCCCCAAGAGCAACATGGGACCTACAAAAGGCGGTTCCCCACCCCATTCGGC  
 TGCAATTGGCTGTAGCTGCCAAAGCCCCGACTACCCGCCAGCTCTAATCATCTTCAATGTTCTGCGCAATGGTCATCACAGTCGTG  
 TAGACCTGATCGGGAACTCCATGGTCATTTTGGCTGTGACCAAGAACAAGAGCTCCGAAATTCTGGCAACATCTTTTGTGGCCAG  
 CCTCTCTGTGGCAGACATGCTGGTGCCATCTACCCCTACCCTTTGATGCTGTATGCCATGTCAAGTTGGGGCTGGGATCTGAGT  
 CAGTCCAGTGCCAGATGGTCGGGTTGGTCAACAGGACTGAGCGTAGTCGGTTCATCTTCAACATTAATGCCATTGCCATCAACC  
 GTTACTGCTACATCTGCCACAGCCTCCAATAACAAGCGGATCTTCAGCCTGCGCAACACTTGCATCTATCTGGTACCTACCTGGGT  
 CATGACTGTCTGCTGCTGCCCTAACATGTACATTGGCACCATTTGAGTATGACCCCTCGCACCTACACCTGCATCTTCAACTAT  
 GTGAACAATCCTGCCCTTACCGTGACCATTTGCTGCATCCACTTCGTCCCTCCTCATCATAGTTGGTTATTGCTACACGAAAA  
 TCTGGATCAAAGTGTGGCAGCCCCGTGACCCAGCTGGACAGAACTCTGACAAACAGTTTGTGAGGTTTCGAAATTTTCTAACCAT  
 GTTGTGATCTTCTCCTTTTGTGAGTTGCTGGTGCCCTGTCAATGTGCTCACGTGTGTTGGTGGCTGTCATTCCAAAGGAAATGG  
 CAGGCAAGATCCCCAACTGGCTTTATCTTGCAGCCTACTGCATAGCCTACTTCAACAGCTGCCCTCAACGCCATCATCTACGGTAT  
 CCTCAATGAGAGTTTCCGAAGAGAAATACTGGACCATCTTCCATGCTATGCGGCACCCCTATCCTGTTTCATCTCTCACCTCATCAGT  
 GATATTCGGGAGACTTGGGAGACCCGAGCTCTCACTGTCGCCGTGTCCGTGCCCGTGATCAAGTCCGAGAGCAAGAGCGTGCTC  
 GTGCCCTGTGCTGCTGGAGGGGACCCCAAGGAACGTCCGGAATGTTCTACTGCTGGTGATGCATCAGCACCCCACTCTGATCG  
 TGCCCTCTGTCGTCGCCAAGCCCCAAACCAAGGTCTACTTCTGTCTACCGCAAAACCTGCCCTCTATCCACCACAAAGTCTATTTCTGGC  
 CACCCCCAAGTCTGCCCTCTGTTTACCCCTAAGCCAGCCTCCTCTGTCCATTGCAAGCCTGCCCTCTGTCCATTTCAAACCCGCCCTCTG  
 TTCAATTTCAAGGGTGACTCTGTCTATTTCAGGGGAGACACTGTCCATTACAGGGGTGCTTCCAAACTTGTACACAGTCACCGTAT  
 CTCTGCTGGCCCTTCCACCAAGTCACCCACATGGCTGGCTACATTAAATCTGGTACCAGCCACCCCTGCCACCCCACTGTT  
 GACTATCTCGAACCTGCCACCAACAGCCACTCTGTGCTCACTGTCTCGACCTCCTTGAGGTCTCAGCCTCCCAATTGCCCTTGAGA  
 TGACCAAGCACTGGCCACCTCAGAGCTGACATTTCTGCCCTCTGTCTTCTGTACCCCTTCGAGCTTGTGCCACCCCTCCTGA  
 TACCACCTGCAATCCCCCATTTGCCCTCTGGTGATTACCGCAAGTCTGTCTTATTGATGATGATTCTGATGATTCTGATGCTCTGAT  
 GAGATGGCTGTGTGA

Fig. 2B

TACTGCTACATCTGCCACAGCCTCCAGTACAATGCGGATCTTCAGCCCTGCTAACACTTGCACTCTATCTGGTTGTTACCTGGGTCA  
TGACTGTTCTGGATGTCCTGCCTAATGTGTACATTTGGCACCATTTGAGTATGACCCCTCGCACCTACACCTGCTACTTCAACTATGT  
GAACAACCCCTGCCCTTTACTGTGACCATTTGTCTGCATCCACTTCGTCCCTCCCTCTCATCATAGTCGGTTATTGCTACACAAAAATC  
TGGATCAAAGTGCTGGCAGACCGGACCCAGCTGGACAGAAATCCTGACAACCCAGTTTGCTGAGGTTTCGAAATTTTCTAACCATGT  
TTGTGATCTTCCTCCTT

**Fig. 2C**



FIG. 3



FIG. 4A

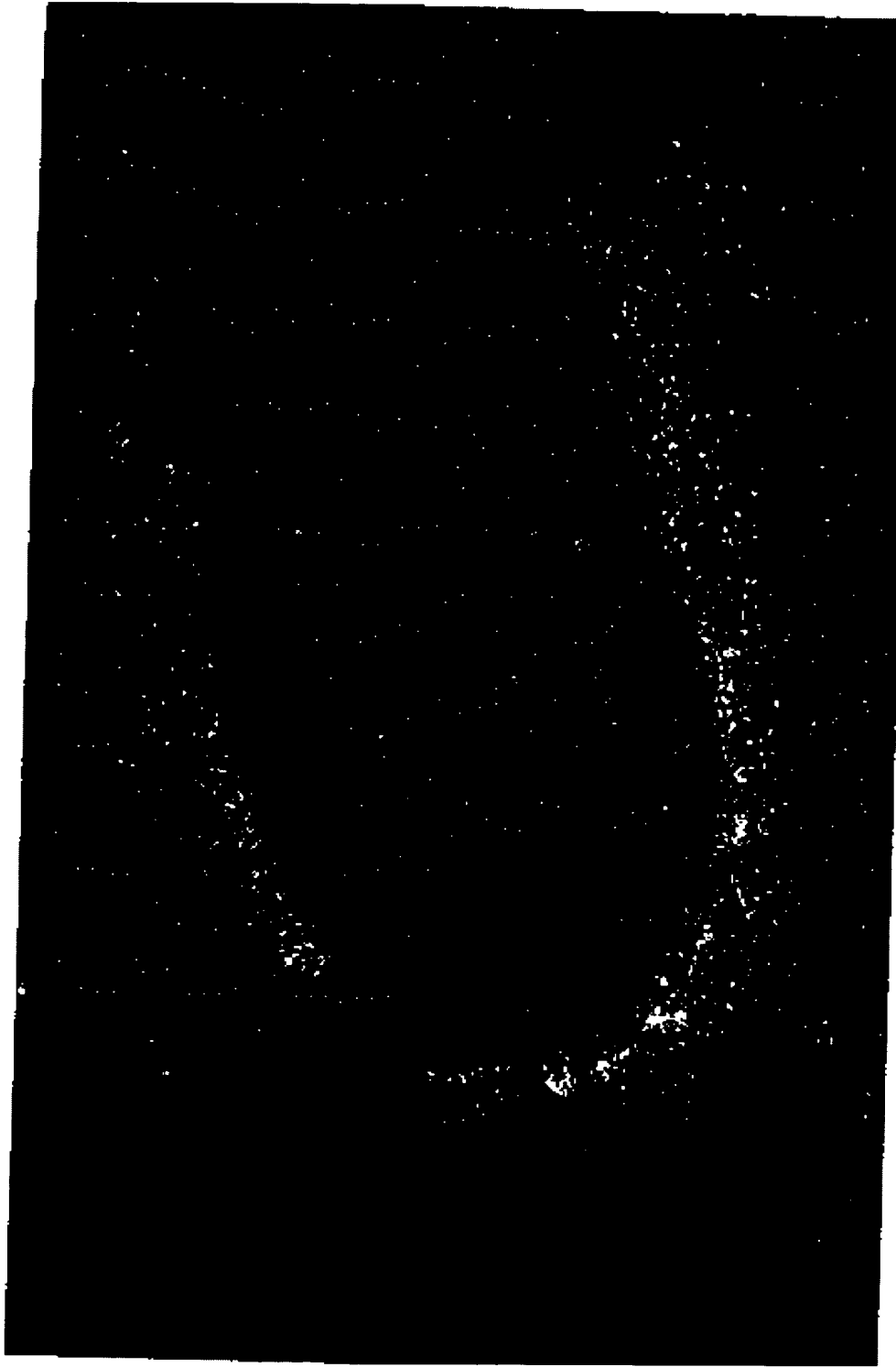


FIG. 4B





FIG. 4C

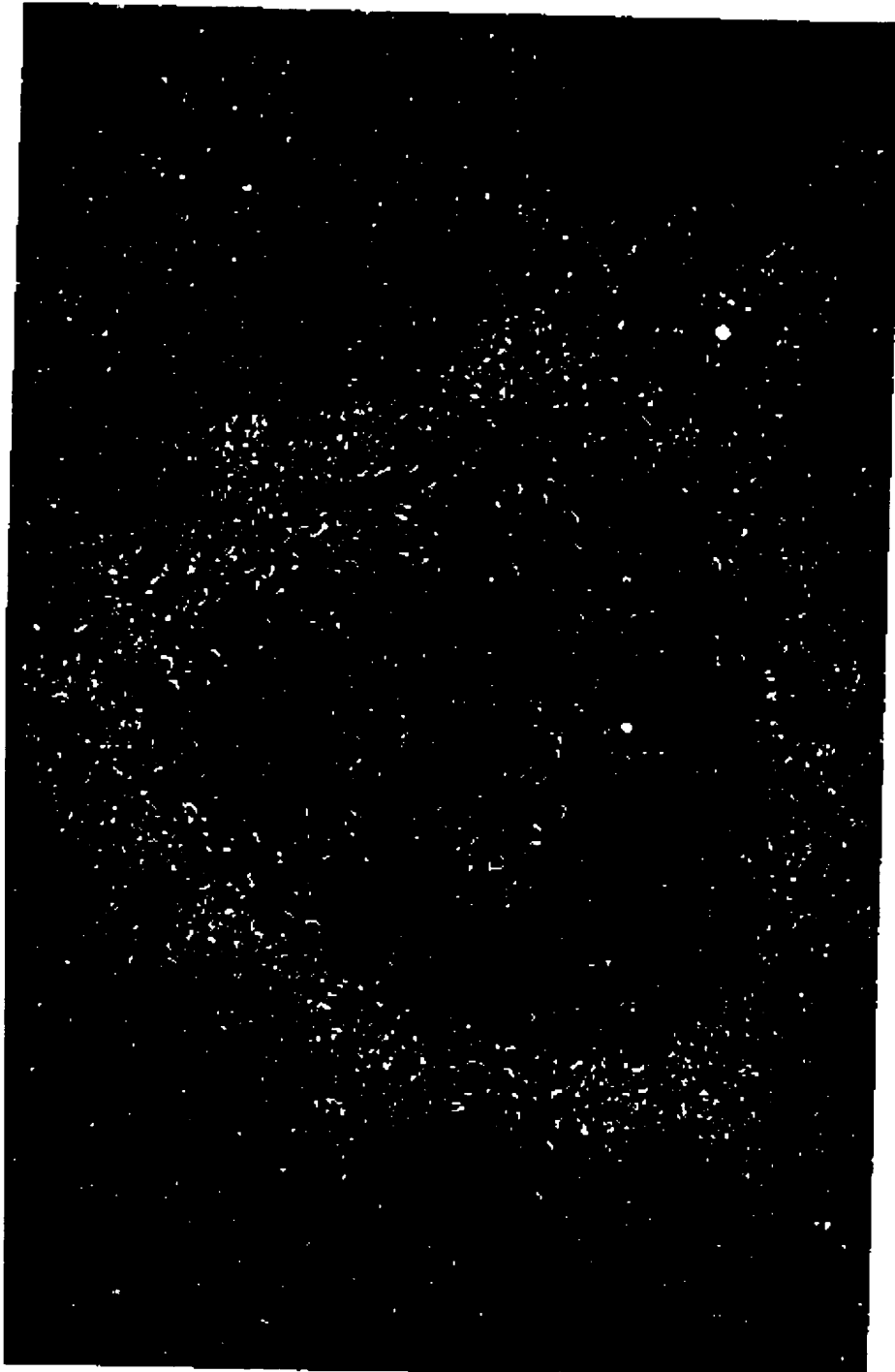


FIG. 4D

AF003625	27599	tgttttgctgtctggacctggctgctgatccctgagcctgctgggagatcttaacgatcccc
U52219	1	
		tgttttgctgtctggacctggctgctgatccctgagcctgctgggagatcttaacgatcccc
AF003625	27659	aggagcaacatggggccaccctagcgggtcccaacccctatggctgtattggctgtaag
U52219	61	
MRR AA	1	aggagcaacatggggccaccctagcgggtcccaacccctatggctgtattggctgtaag
		M G P T L A V P T P Y G C I G C K
AF003625	27719	ctaccccgccagaataacccaccggctctaatcatctttatgttctgcgcgatgggttatc
U52219	121	
MRR AA	18	ctaccccgccagaataacccaccggctctaatcatctttatgttctgcgcgatgggttatc
		L P Q P E Y P P A L I I F M F C A M V I
AF003625	27779	accatcgcttgttagacctaatcggcaactccatggtcattttggctgtgacgaagaacaag
U52219	181	
MRR AA	38	accatcgcttgttagacctaatcggcaactccatggtcattttggctgtgacgaagaacaag
		T I V V D L I G N S M V I L A V T K N K

**Fig. 5A**

AF003625	27839	aagctccggaattcttg	
U52219	241	aagctccggaattcttg	
MRR AA	58	K L R N S G	
AF003625	30712	ttcaggcaacatcttcgtggtcagtcctctctgtggccgatatgctggtggccatctaccc	
U52219	252	ttctggcaacatcttcgtggtcagtcctctctgtggccgatatgctggtggccatctaccc	
MRR AA	62	S G N I F V V S L S V A D M L V A I Y P	
AF003625	30772	ataccctttgatgctgcacatgccatgtccattgggggctgggatctgagccagttacagt	
U52219	312	ataccctttgatgctgcacatgtccattgggggctgggatctgagccagttacagt	
MRR AA	82	Y P L M L H A M S I G G W D L S Q L Q C	
AF003625	30832	ccagatggtcgggttcacacacagggtgagtggtggctccatcttcaacatcgtggc	
U52219	372	ccagatggtcgggttcacacacagggtgagtggtggctccatcttcaacatcgtggc	
MRR AA	102	Q M V G F I T G L S V V G S I F N I V A	

Fig. 5B

AF003625	30892	aatcgctatcaaccggttactggtacatctgccacagcctccagtagaacggatcttcag	
U52219	432	aatcgctatcaaccggttactggtacatctgccacagcctccagtagaacggatcttcag	
MRR AA	122	I A I N R Y C Y I C H S L Q Y E R I F S	
AF003625	30952	tgtgcgcaatacctgcattacctgggtcatcacctggatcatgacgctcctgggtgctct	
U52219	492	tgtgcgcaatacctgcattacctgggtcatcacctggatcatgacgctcctgggtgctct	
MRR AA	142	V R N T C I Y L V I T W I M T V L A V L	
AF003625	31012	gcccacaatgtacattggcaccatcgagtagatcctcgacacctacacctgcattctcaa	
U52219	552	gcccacaatgtacattggcaccatcgagtagatcctcgacacctacacctgcattctcaa	
MRR AA	162	P N M Y I G T I E Y D P R T Y T C I F N	
AF003625	31072	ctatctgaacaaccctgtcttcaactgtttaccatcgtctgcattccacttcctccctct	
U52219	612	ctatctgaacaaccctgtcttcaactgtttaccatcgtctgcattccacttcctccctct	
MRR AA	182	Y L N N P V F T V T I V C I H F V L P L	

Fig. 5C

AF003625	31132	cctcatcgtgggtttctgctacgtgaggatctggaccaaaagtgcggggcccgtagacc	
U52219	672	cctcatcgtgggtttctgctacgtgaggatctggaccaaaagtgcggggcccgtagacc	
MRR AA	202	L I V G F C Y V R I W T K V L A A R D P	
AF003625	31192	tgcagggcagaatcctgacaaccaacttgctgaggttcgcaattttctaaccatgtttgt	
U52219	732	tgcagggcagaatcctgacaaccaacttgctgaggttcgcaattttctaaccatgtttgt	
MRR AA	222	A G Q N P D N Q L A E V R N F L T M F V	
AF003625	31252	gattcttcctcctctttgacagtgtgctgggtgcctatatcaacgtgctcactgtcttgggtggc	
U52219	792	gattcttcctcctctttgacagtgtgctgggtgcctatatcaacgtgctcactgtcttgggtggc	
MRR AA	242	I F L L F A V C W C P I N V L T V L V A	
AF003625	31312	tgtcagtcggaaggagatggcaggcaagatccccaaactggctttatcttgcagcctactt	
U52219	852	tytcagtcggaaggagatggcaggcaagatccccaaactggctttatcttgcagcctactt	
MRR AA	262	V S P K E M A G K I P N W L Y L A A Y F	

Fig. 5D

AF003625	31372	catagcctacttcaacagctgcctcaacgctgtgatctacgggctcctcaatgagaattt	
U52219	912	catagcctacttcaacagctgcctcaacgctgtgatctacgggctcctcaatgagaattt	
MRR AA	282	I A Y F N S C L N A V I Y G L L N E N F	
AF003625	31432	ccgaagagaatactggaccatcttccatgctatgcggcacccctatcatattcttctctgg	
U52219	972	ccgaagagaatactggaccatcttccatgctatgcggcacccctatcatattcttccctgg	
MRR AA	302	R R E Y W T I F H A M R H P I I F F P G	
AF003625	31492	cctcatcagtgatattcgtgagatgcaggagggcccgtaaccctggccccgccccgcccc	
U52219	1032	cctcatcagtgatattcgtgagatgcaggagggcccgtaaccctggccccgccccgcccc	
MRR AA	322	L I S D I P E M Q E A R T L A P A P A H	
AF003625	31552	tgctcgcgaccaagctcgtgaacaagaccgtgccccatgcctgtcctgtgtggaggaaac	
U52219	1092	tgctcgcgaccaagctcgtgaacaagaccgtgccccatgcctgtcctgtgtggaggaaac	
MRR AA	342	A R D Q A R E Q D R A H A C P A V E E T	

Fig. 5E

AF003625	31612	ccgatgaatgtccggaatgttccattacctggtgatgctgcagctggccaccccgaccg	
U52219	1152	ccgatgaatgtccggaatgttccattacctggtgatgctgcagctggccaccccgaccg	
MRR AA	362	P M N V R N V P L P G D A A A G H P D R	
AF003625	31672	tgcctctggccaccctaagccccattccagatcctcctctgcctatcgcaaatctgcctc	
U52219	1212	tgcctctggccaccctaagccccattccagatcctcctctgcctatcgcaaatctgcctc	
MRR AA	382	A S G H P K P H S R S S A Y R K S A S	
AF003625	31732	taccacacacaagtctgtcttttagccactccaaggctgcctctgtggtcacctcaagcctgt	
U52219	1272	taccacacacaagtctgtcttttagccactccaaggctgcctctgtggtcacctcaagcctgt	
MRR AA	402	T H H K S V F S H S K A A S G H L K P V	
AF003625	31792	ctctggccactccaagcctgcctctgtggtcaccccccaagtctgccactgtctacccctaagcc	
U52219	1332	ctctggccactccaagcctgcctctgtggtcaccccccaagtctgccactgtctacccctaagcc	
MRR AA	422	S G H S K P A S G H P K S A T V Y P K P	

Fig. 5F



AF003625	31852	tgcctctgtccatttcaaggctgactctgtccatttcaagggtgactctgtccatttcaa	
U52219	1392	tgcctctgtccatttcaagggtgactctgtccatttcaagggtgactctgtccatttcaa	
MRR AA	442	A S V H F K G D S V H F K G D S V H F K	
AF003625	31912	gcctgactctgttcatattcaagcctgtctccagcaaccccaagcccatcactggccacca	
U52219	1452	gcctgactctgttcatattcaagcctgtctccagcaaccccaagcccatcactggccacca	
MRR AA	462	P D S V H F K P A S S N P K P I T G H H	
AF003625	31972	tgtctctgtggcagccactccaagtctgccttcagtgtgccaccagccaccctaaacc	
U52219	1512	tgtctctgtggcagccactccaagtctgccttcagtgtgccaccagccaccctaaacc	
MRR AA	482	V S A G S H S K S A F S A A T S H P K P	
AF003625	32044	catcaagccagctaccagccatgtgtgagccaccactgctgactatccccaagcctgccac	
U52219	1572	catcaagccagctaccagccatgtgtgagccaccactgctgactatccccaagcctgccac	
MRR AA	502	I K P A T S H A E P T A D Y P K P A T	

Fig. 5G

AF003625	32104	taccagccaccctaaagcccactgctgctgacaaccctgagctctctgcctcccatggccc	
U52219	1632	taccagccaccctaaagcccgctgctgctgacaaccctgagctctctgcctcccatggccc	
MRR AA	522	T S H P K P A A A D N P E L S A S H C P	
AF003625	32164	cgagatccctgccattgcccaccctgtgtctgacgacagtgacctccctgagtcggcctc	
U52219	1692	cgagatccctgccattgcccaccctgtgtctgacgacagtgacctccctgagtcggcctc	
MRR AA	542	E I P A I A H P V S D D S D L P E S A S	
AF003625	32224	tagccctgcccgtggggcccaagcctgctgccagccagctggagctctgacaccatcgc	
U52219	1752	tagccctgcccgtggggcccaagcctgctgccagccagctggagctctgacaccatcgc	
MRR AA	562	S P A A G P T K P A A S Q L E S D T I A	
AF003625	32284	tgaccttcctgaccctactgtagtcactaccagtagccaatgattaccatgatgtcgtggt	
U52219	1812	tgaccttcctgaccctactgtagtcactaccagtagccaatgattaccatgatgtcgtggt	
MRR AA	582	D L P D P T V V T T S T N D Y H D V V V	

Fig. 5H

**Fig. 51**